PRESENT STATUS OF THE TRIBE MAYETINI IN THE UNITED STATES—PART II CALIFORNIA

(Coleoptera: Pselaphidae)

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The species of *Mayetia* occurring in California are distinct from other species in the United States in that the fourth segment of the maxillary palpus is devoid of sensory developments with the exception of the cone and specialized setae (fig. 2).

Seven species are now known to occur in California. Most of these were collected during 1957 and 1958. Considering the number of species found in a relatively short period of time in a small area of California, an estimate of 25 species of *Mayetia* inhabiting the State would be conservative.

Mayetia mendocinoensis Schuster, Marsh and Park, new species

(Figs. 1–5, 9, 10)

Male.—Head 0.11 mm. long × 0.12 mm. wide; pronotum 0.13 mm. × 0.11 mm.; elytra 0.12 mm. × 0.13 mm.; total length 1.11 mm. Elongate depressed; pale testaceous; impunctate; body pubescence monaxial, primarily straight, suberect. *Head* lacking eyes; about 54 setae on dorsal surface; tempora sharply rounded to neck; two small vertexal foveae behind middle, not perforate, being about twice as deep as the depth of the integument and separated by slightly less than the distance between fovea and lateral margin; feeble sulci extend forward from each vertexal fovea; two small tubercles near the antennal acetabulae and two near the base of the head; frontal margin sinuate between moderate antennal acetabulae; clypeus short, transverse; labrum tridentate on each side of excavate middle (fig. 3); mandibles arcuate, left crossing dorsal to right; inner ramus of right mandible with symmetrical "M"-shaped tooth; basal part of "M" of tooth on left ramus reduced (fig. 5); ventral surface of head flat with small centrally located gular fovea; tentorial connection to vertexal foveae complete; two macrosetae occur posterior to gular fovea; mentum with two large integumental projections anterior to a pair of setae (fig. 4); a circular mark and two setae occur on head capsule posterior to mentum (fig. 4); maxillary palpus of four segments with one macroseta on segment III; segment I minute; II pyriform, distal anterior edge flattened; III globose; IV ovoid with a minute, straight palpal cone and two thin hyaline setae midway on outer margin (fig. 2); antenna of 11 segments, slightly verticillate; segment I twice as long as II, narrower basally; III and IV half as long and nearly three-quarters as wide as II; V noticeably wider than IV; VI scarcely narrower than V; VII longer than VI and wide as II; VIII similar to V; IX through XI form strong club with X and XI connate; IX transverse; X

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cup-shaped with four macrosetae; XI shorter than X, somewhat spongeous with seven long, lamellate setae spaced equidistally around base (fig. 1). *Thorax* with pronotum subelliptical, longer than wide; about 80 setae dorsally; definite longitudinal glabrous area weakly reticulate; lacking foveae or sulci; apterous; elytra lacking basal and subhumeral foveae; disc simple; definite foveae lacking although faint sulci parallel the suture; humeral angles rounded; lateral margins weakly expanded posterior to rounded apical angles; apices truncate; about 60 setae dorsally. Prosternum rather long, integument smooth before coxae, reticulate laterally; mesosternum simple; metacoxae contiguous, mesocoxae contiguous, the coxal cavities slightly separated; meso- and metathoracic internal structures as illustrated (fig. 9); pro- and mesotrochanters simple, metatrochanter spined; each tibia with one macroseta midway on anterior surface; a short comb of setae dorsally and a long comb ventrally near apex; apex of each tibia bearing two more or less distinct spines; tarsi of two segments ending in a single strong claw. *Abdomen* with six visible tergites, I through V similar in shape; V and VI not separated by the hexagonally marked membrane occurring between I through IV, reticulations of this membrane become more rectangular proximal to segments; segments II through V with foveae at each basolateral angle, foveae transversely connected by weak, pubescent sulci; sixth rounded distally; six visible sternites; I with wide coxal lines; II through V similar, each with foveae and sulci as in the tergites; VI with a large eccentric notch; the apices of a paired segment are external, sclerotized and terminal; a "doughnut"-shaped spiracle occurs on the first, fifth and sixth tergites. Sixth sternite is 0.067 mm. from the front of the segment medially to a line across the distal margins of the notch; notch 0.017 mm. deep. Aedeagus with a flattened, arcuate apex, of 0.135 mm. long × 0.076 mm. wide (fig. 10).

Female.—As described for the male with the following exceptions: Sixth sternite terminal, symmetrically sinuate apically; a sinuate line due either to a thickening or an inward development of the exoskeleton of the sixth sternite is visible within the terminal segment; metatrochanters not spined.

The *holotype male,* MENDOCINO, MENDOCINO COUNTY, CALIFORNIA, April 17, 1954, is deposited in the California Academy of Sciences, paratypes in the California Academy of Sciences, California Insect Survey, University of California at Davis, U.S. National Museum, and in the collections of the authors.

The specimens representing this species have all been collected in Mendocino County, California, by J. R. Helfer unless otherwise specified. Caspar, 2♀ March 7, 1954; 1♂, 12♀ July 14, 1957; 6♂, 5♀ August 4, 1957 (J. R. Helfer, G. A. Marsh). Little River, 2♀ May 3, 1955. Mendocino, 3♂, 4♀ April 17, 1954; 3♂, 1♀ March 16, 1955; 5♂, 8♀ June 18, 1957; 5♂, 10♀ July 1, 1957; 67♂, 57♀ July 6, 1957 (J. R. Helfer, R. O. Schuster); 2♂, 2♀

July 16, 1957; 2♂ July 21, 1957; 6♂, 5♀ July 24, 1957; 15♂, 5♀ August 4, 1957 (J. R. Helfer, G. A. Marsh); 2♂, 3♀ September 9, 1957; 7♂, 13♀ December 2, 1957; 19♂, 13♀ December 14, 1957.

The males of this species may be recognized by the shape of the aedeagus which is usually distinct in cleared specimens. The majority of the females examined showed a definite sinuate marking within the last abdominal segment. Since the abdomen is capable of considerable movement and measurement of the segments is difficult, no emphasis has been placed on their ratios.

The numbers of setae were counted by focusing on the dorsum at high-dry magnification and counting the setae moderately in focus. The numbers of setae are approximately the same for the other species examined from California and across the United States. The thin, hyaline setae of the antennal club are proportionately wider than those of the next species but this can be appreciated only by comparison.

The means and standard deviations of the measurements for 30 males and 30 females are given below. The head length was measured across the front of the antennal tubercles to a line across the back of the tempora. The elytral length was taken from the posterior point of the scutellum to a line across the apices. Other measurements are the maximum possible in a longitudinal or transverse direction. Total length was the distance from the front of the antennal tubercles to the end of the abdomen without considering expansion or contraction inherent in the mount. Males. Head 0.119 ± 0.004 mm. long $\times$ 0.130 ± 0.005 mm. wide; pronotum $0.133 \pm 0.003 \times 0.123 \pm 0.006$; elytra $0.119 \pm 0.005 \times 0.140 \pm 0.009$; total length 1.05 ± 0.08. Females. Head 0.120 ± 0.003 mm. long $\times$ 0.129 ± 0.004 mm. wide; pronotum $0.135 \pm 0.004 \times 0.122 \pm 0.005$; elytra $0.120 \pm 0.005 \times 0.135 \pm 0.008$; sixth tergite $0.118 \pm 0.005 \times 0.113 \pm 0.004$; sixth sternite $0.091 \pm 0.004 \times 0.130 \pm 0.005$; total length 1.12 ± 0.07.

Specimens of *M. mendocinoensis* have been taken in numbers from the top few inches of soil of undisturbed podzol profiles, probably of the Caspar series. They are commonly found in the first few inches of mineral soil of the A2 horizon and are infrequently recovered from the overlying mat of organic debris. Within the distribution of the soil series, there seems

to be no correlation between the occurrence of a particular plant species and the occurrence of *Mayetia*. *Mayetia mendocinoensis* has been taken from soil with pH readings as low at 4.1, but the largest numbers have been recovered from soils of about pH 5.5.

Mayetia walkeri Schuster, Marsh and Park, new species

(Figs. 6–8, 11)

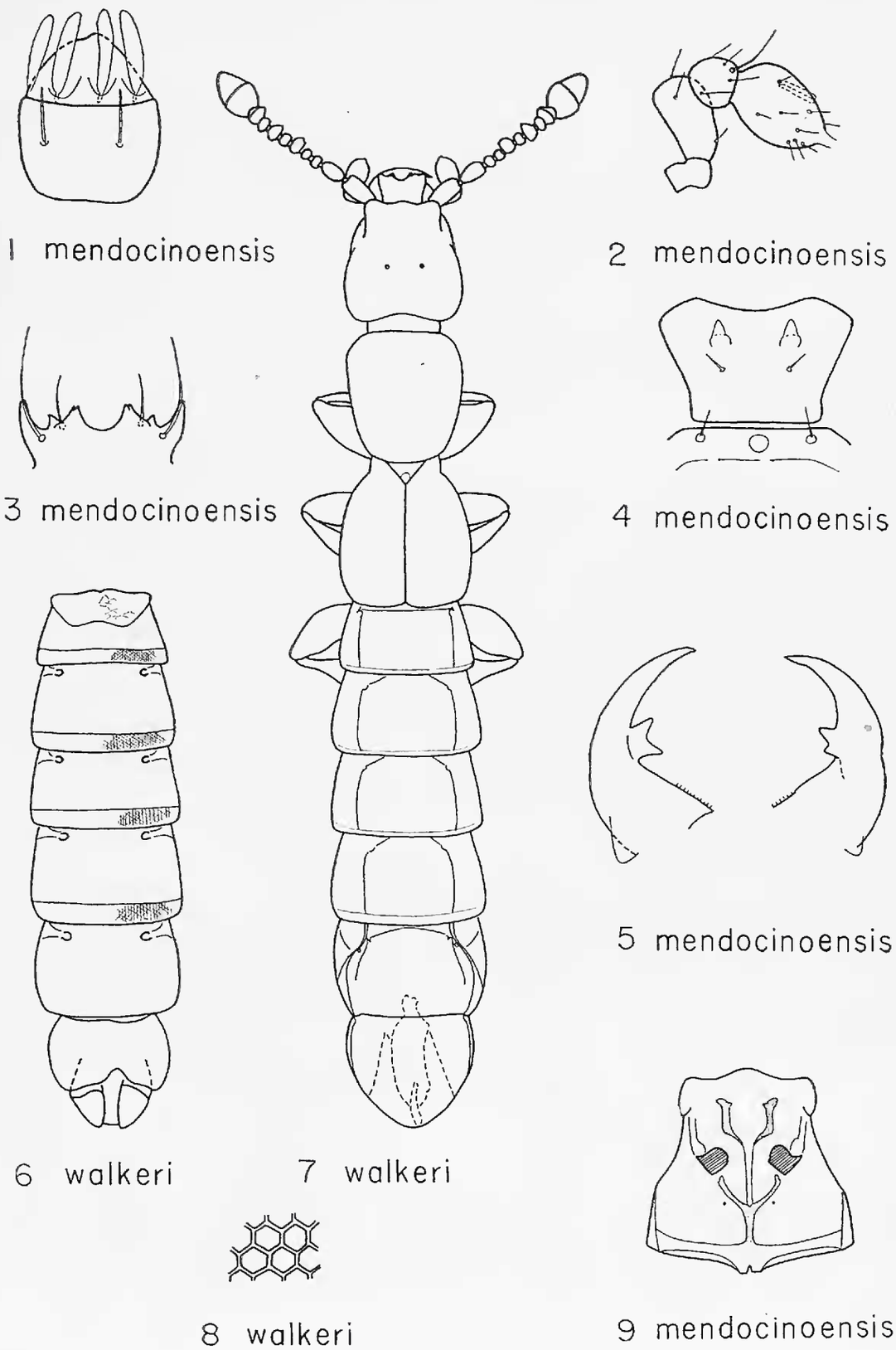
Male.—Head 0.16 mm. long × 0.16 mm. wide; pronotum 0.17 mm. × 0.14 mm.; elytra 0.17 mm. × 0.17 mm.; total length 1.21 mm. Substantially as described for *M. mendocinoensis*. The vertexal foveae are mutually closer than the distance from fovea to lateral margin; sixth sternite is 0.079 mm. long, the notch 0.022 mm.; aedeagus has a sclerotized "median lobe," visible even within the abdomen, 0.141 mm. long × 0.077 mm. wide (fig. 11).

Female.—As described for the male with the following exceptions: Sixth sternite evenly sinuate apically and much wider than long; a straight, transverse line visible within the last abdominal segment; metatrochanter not spined.

Holotype male collected 6.4 MILES SOUTH OF KLAMATH, DEL NORTE COUNTY, CALIFORNIA from redwood litter and soil by N. A. Walker on September 20, 1955, is deposited in the California Academy of Sciences, a paratype male, same data, in the collection of Orlando Park, and one female, same data, in the collection of R. O. Schuster.

The males are easily separated from those of the preceding species by the genital structure. This difference is apparent in cleared specimens and dissection is unnecessary. The transverse line within the last abdominal segment of the female seems to divide an internal structure into basal and apical parts and easily distinguishes this species from any of the others examined. When more specimens become available for study, ratios of the length to width of the sixth tergite and sternite may be found to differ sufficiently to assist in the discrimination of this species.

Specimens of this species have been recovered from Mendocino, Mendocino County, California. While considered conspecific they are not included in the type series. The main departure from the Del Norte County specimens is size, the specimens from Mendocino County being approximately the same as *M. mendocinoensis*. Additional series from intervening localities should be obtained to substantiate the conspecific relationship of specimens from Mendocino and Del Norte Counties.



EXPLANATION OF FIGURES

Fig. 1, Antennal club. Fig. 2, Maxillary palpus. Fig. 3, Labrum. Fig. 4, Mentum and front margin of head capsule. Fig. 5, Mandibles. Fig. 6, Ventral aspect of male abdomen. Fig. 7, Dorsal aspect of entire male. Fig. 8, Detail of areolate membrane. Fig. 9, Meso- and metathoracic structures, internal aspect.

Mayetia raneyi Schuster, Marsh and Park, new species
(Fig. 12)

Male.—Head 0.12 mm. long × 0.14 mm. wide; pronotum 0.13 mm. × 0.13 mm.; elytra 0.13 mm. long; total length 1.24 mm. As described for *M. mendocinoensis.* Sixth sternite is 0.059 mm. long, the notch 0.017 mm.; aedeagus cuniform, terminated apically by a membrane in which a sclerotized piece lies at right angles to the basal portion, 0.101 mm. long × 0.042 mm. wide (fig. 12).

Female.—Also very similar to that of *M. mendocinoensis.* The terminal abdominal segment is of similar shape but a subrectangular marking is usually visible in the basal half.

The *holotype male,* 10 male and 10 female paratypes were collected NINE MILES SOUTH OF MONTICELLO, NAPA COUNTY, CALIFORNIA on January 22, 1958 from 0 to 20 cm. in sand from under oak by Frank Raney and R. O. Schuster. Additional paratypes were collected as follows: Two males, eight females from the same locality on December 13, 1957 by Leslie M. Smith and R. O. Schuster; one male 10 miles south of Monticello from soil on a grassy slope on December 13, 1957 by Leslie M. Smith and R. O. Schuster; one male and one female taken from sand beneath *Umbellularia californica* nine miles south of Monticello on January 19, 1958 by R. O. Schuster; 20 males and 37 females, Napa Valley Ranch, Napa County, California on April 12, 1958 by Leslie M. Smith from soil under oaks. The holotype male and paratypes of both sexes are deposited in the California Academy of Sciences, paratypes in the California Insect Survey, U.S. National Museum and in the collections of the authors.

Both sexes of this species can be separated from the others by the described secondary sexual characters.

Mr. Frank Raney has been of assistance not only in the collection of this species but also in determining soil types and plant species for many of the collection sites.

Mayetia scobina Schuster, Marsh and Park, new species
(Fig. 13)

Male.—Head 0.11 mm. long × 0.11 mm. wide; pronotum 0.13 mm. × 0.11 mm.; elytra 0.12 mm. long; total length 1.07 mm. As described for *M. mendocinoensis* except for the secondary sexual characters. Sixth sternite is 0.059 mm. long, the notch 0.014 mm.; aedeagus with a scaly area at median one-third, 0.135 mm. long (fig. 13); metatrochanteral spine is relatively broader, being of triangular shape.

Female.—Ultimate segment of abdomen with interior opposed "comma"-shaped markings.

The *holotype male* and four female paratypes were collected FOUR MILES WEST OF NEWCASTLE, PLACER COUNTY, CALIFORNIA on March 12, 1958 from soil under *Quercus wislizenii* by Leslie M. Smith and R. O. Schuster. Additional paratypes include five males and 14 females taken from the same locality on March 21, 1958 from soil under *Q. wislizenii* and soil under grass by W. H. Lange, Leslie M. Smith and R. O. Schuster, and nine males and 18 females also from the same locality taken on April 15, 1958 by Leslie M. Smith and R. O. Schuster.

The holotype male is deposited in the California Academy of Sciences, paratypes in the California Academy of Sciences, California Insect Survey, U.S. National Museum, and the collections of the authors.

The males of this species are easily recognized by the peculiar shape of the aedeagus. The females were associated with the males by their occurrence in loci quite separate from the microhabitats occupied by a second species found in the same general area. They are distinguished by the two "comma"-shaped markings in the terminal segment of the abdomen. A series of short, transverse lines may or may not be evident anterior to these markings.

Mayetia langei Schuster, Marsh and Park, new species
(Fig. 14)

Male.—Head 0.12 mm. long × 0.13 mm. wide; pronotum 0.14 mm. × 0.12 mm.; elytra 0.13 mm. long; total length 1.03 mm. Essentially as described for *M. mendocinoensis*. Sixth tergite is 0.063 mm. long, the notch 0.014 mm.; aedeagus 0.135 mm. long (fig. 14).

Female.—Lacking identifying markings within the distal abdominal segment.

The *holotype male*, nine male and eight female paratypes were collected FOUR MILES WEST OF NEWCASTLE, PLACER COUNTY, CALIFORNIA on March 21, 1958 by W. H. Lange, Leslie M. Smith, and R. O. Schuster. Additional paratypes include one male collected five miles west, and four females four miles west of Newcastle on March 12, 1958 by Leslie M. Smith and R. O. Schuster. Most of these specimens were recovered from Aiken sandy loam of a pH range from 5.8 to 7.2. All but three of the specimens were taken under the crowns of *Quercus wislizenii*. The holotype male and paratypes are deposited in the California Academy of Sciences, additional paratypes in the California Insect Survey, and in the collections of the authors.

The males of this species are distinctive on the basis of the genitalia. The females, associated with the males because of their co-existence in small sized soil samples, seem to be inseparable from the females of the following species.

Mayetia fistula Schuster, Marsh and Park, new species

(Figs. 15, 16)

Male.—Head 0.11 mm. long × 0.12 mm. wide; pronotum 0.13 mm. × 0.12 mm.; elytra 0.12 mm. long; total length 1.03 mm. Essentially as *M. mendocinoensis*. Sixth tergite 0.067 mm. long, the notch 0.010 mm.; aedeagus 0.142 mm. long (fig. 15).

Female.—Not associated.

This species is represented by the *holotype male* and two male paratypes collected NEAR NASHVILLE, EL DORADO COUNTY, CALIFORNIA on April 25, 1958 by Leslie M. Smith and R. O. Schuster. These specimens were recovered from a clay loam, pH 6.8. The type is deposited in the California Academy of Sciences, the paratypes in the collection of R. O. Schuster.

What appears to be a single, highly variable species has been recovered from localities in El Dorado and Amador Counties. The aedeagi vary from a simple tube-like structure (fig. 16) to the form selected for the type in which the distal portion is gradually expanded forming a distinct barb on one side (fig. 15). Regardless of the degree of development of this barb, the apex remains comparatively blunt, and the width, on either side of the basal constriction, is subequal. These two features have been considered in separating *M. fistula* from the following species, the aedeagi of which might otherwise be considered within the range of variation of *M. fistula*. The variation observed in the aedeagi of the series presently considered as *M. fistula* occurs in three steps and may eventually be interpreted as representing closely related species.

Mayetia pravitas Schuster, Marsh and Park, new species

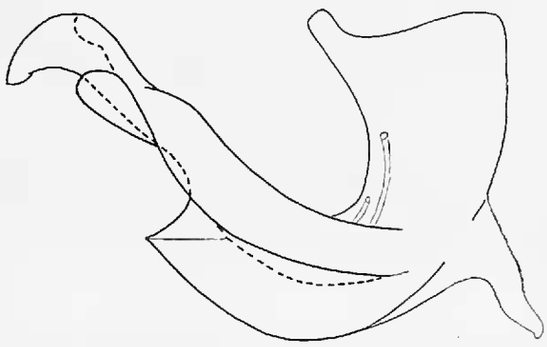
(Fig. 17)

Male.—Head 0.12 mm. long × 0.13 mm. wide; pronotum 0.13 mm. × 0.12 mm.; elytra 0.13 mm. long; total length 1.18 mm. Except for the following differences as in *M. mendocinoensis:* Sixth tergite is 0.063 mm. long, the notch 0.016 mm.; aedeagus 0.110 mm. long × 0.034 mm. wide (fig. 17).

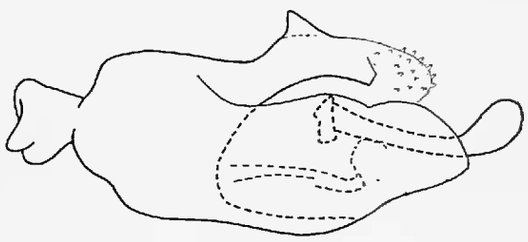
Female.—Lacking definite marking within the ultimate abdominal segment.

The *holotype male,* five male and seven female paratypes were collected NEAR NASHVILLE, EL DORADO COUNTY, CALIFORNIA in the Consumnes River drainage on March 5, 1958 by Leslie

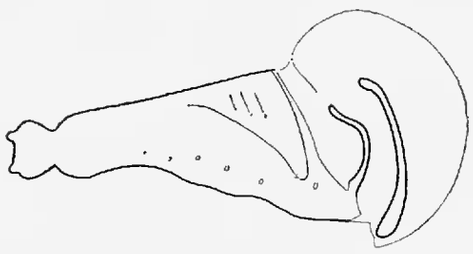
M. Smith and R. O. Schuster. The soil was taken from a slope on which a mixture of buckeye, bay and oak was growing. Five additional males and seven females were collected at the



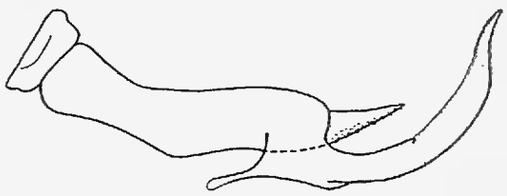
10 mendocinoensis



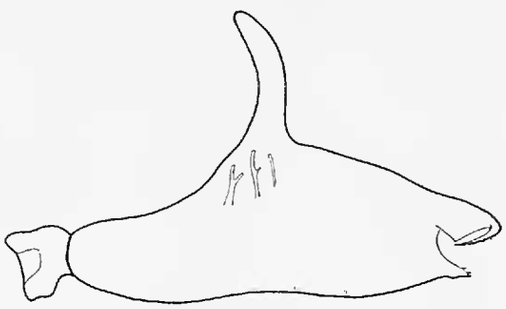
11 walkeri



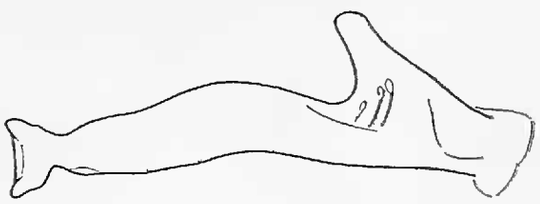
12 raneyi



13 scobina



14 langei



15 fistula

16 fistula ?

17 pravitas

EXPLANATION OF FIGURES

Figs. 10–17, Aedeagi, figs. 15, 16, represent suspected range of variation exhibited in the aedeagi of *M. fistula.*

same locality on April 25, 1958 from a clay loam with a pH of 6.8 by Leslie M. Smith and R. O. Schuster.

The holotype male and paratypes are deposited in the California Academy of Sciences, paratypes in the California Insect Survey, U.S. National Museum, and in the collections of the authors.

Although very close of the preceding species, the male aedeagus differs in being more arcuate, the distal end is acute, and the structure is considerably expanded after the basal constriction.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE: NOTICE OF PROPOSED USE OF PLENARY POWERS IN CERTAIN CASES (A.[N.S.]43)

In accordance with a decision of the 13th International Congress of Zoology, 1948, public notice is hereby given of the possible use by the International Commission on Zoological Nomenclature of its plenary powers in connection with the following cases, full details of which will be found in *Bulletin of Zoological Nomenclature*, Vol. 17, parts 3/5, published on 15 December, 1959:

(1) Designation of a type-species for the nominal genus *Bolitochara* Mannerheim, 1831 (Class Insecta, Order Coleoptera). Z.N.(S.)243;

(2) Designation of type-species for the nominal genera *Ischnopoda* Stephens, 1835, and *Tachyusa* Erichson, 1837 (Class Insecta, Order Coleoptera). Z.N.(S.)244;

(3) Suppression of the generic name *Southernia* Filipjev, 1927 (Class Nematoda). Z.N.(S.)940.

Any zoologist who wishes to comment on any of the above cases should do so in writing, and in duplicate, as soon as possible, and in any case before 15 May, 1960. Each comment should bear the reference number of the case in question. Comments received early enough will be published in the *Bulletin of Zoological Nomenclature*. Those received too late for publication will, if received before 15 May, 1960, be brought to the attention of the Commission at the time of commencement of voting.

All communications on the above subject should be addressed as follows: The Assistant Secretary, International Commission on Zoological Nomenclature, c/o British Museum (Natural History), Cromwell Road, London, S.W. 7, England.—W. E. CHINA, *Assistant Secretary, International Commission on Zoological Nomenclature.*